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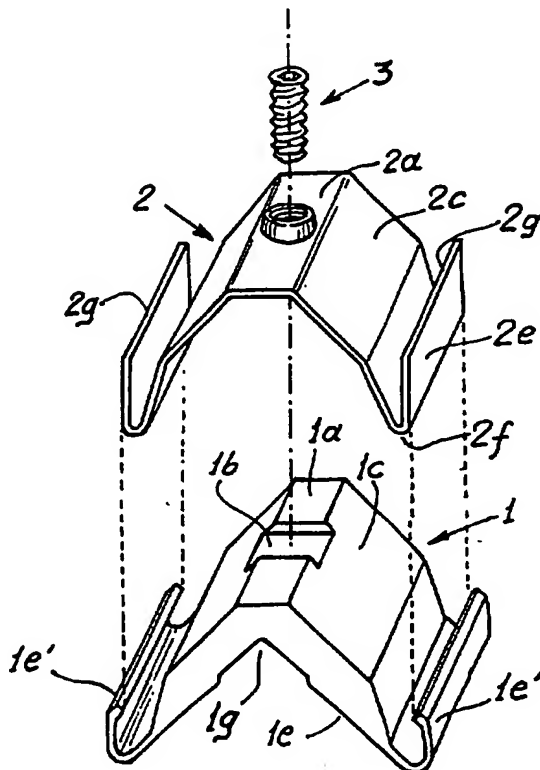
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(54) Title: JOINT FOR THE ANGULAR CONNECTIONS OF DOOR / WINDOW PROFILE FRAMES AND THE LIKE



(57) Abstract: The angular joint of the invention comprises a slide base portion (1) and a sheet metal mobile portion (2) superimposed thereupon, the sheet metal portion (2) including upwardly extending legs (2e) with indenting edges (2g), a bolt (3) being employed in the tightening process of the joint, wherein after the joint has been inserted into the hollow profile members being brought together for connection, the bolt (3) acts so as to exert an upwardly raising force onto the sheet metal mobile portion (2), whilst maintaining base portion (1) at a fixed position, and subsequently leading the sharp indenting edges (2g) of the sheet metal portion (1) to producing an indentation effect into the walls of the corresponding chambers (13a, 13b) of the hollow profiles being angularly connected with the joint, as the joint is being tightened, thereby resulting in a robust, self aligned connection of the hollow profile members.

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| Y | GB 2 072 296 A (ANGLIAN WINDOWS LTD) 30 September 1981 (1981-09-30) page 1, line 33 -page 3, line 21; figures | 1-3,7,8, 10 |
| Y | US 5 109 645 A (BUCCI CARLO G) 5 May 1992 (1992-05-05) column 2, line 40 - line 54 column 3, line 30 -column 4, line 5 figures 1-10 | 1-3,7,8, 10 |
| A | DE 37 26 594 A (ERBSLOEH JULIUS & AUGUST) 23 February 1989 (1989-02-23) column 2, line 15 - line 31 column 2, line 47 -column 3, line 23 column 5, line 23 - line 38 figure 4 | 1,3 |
| | --- -/-- | |

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| A | EP 0 644 312 A (ALUMIX SPA) 22 March 1995 (1995-03-22) cited in the application the whole document ---- | 1,2,6,8, 10 |
| A | US 3 848 390 A (ANDERSON W ET AL) 19 November 1974 (1974-11-19) the whole document ---- | 1,9,10 |
| A | EP 0 100 733 A (TECHNAL FRANCE) 15 February 1984 (1984-02-15) page 4, line 14 -page 6, line 36; figures ---- | 1,2,5, 7-10 |
| A | EP 1 054 133 A (SKS STAKUSIT BAUTECHNIK GMBH) 22 November 2000 (2000-11-22) column 3, line 32 - line 48; figures ---- | 3,4 |
| A | US 3 163 264 A (LOUIS GONDRY) 29 December 1964 (1964-12-29) column 2, line 4 - line 9 column 2, line 65 -column 3, line 33 figures 3-5 ----- | 3,5 |

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| GB 2072296 | A | 30-09-1981 | NONE | |
| US 5109645 | A | 05-05-1992 | US 4987709 A | 29-01-1991 |
| DE 3726594 | A | 23-02-1989 | DE 3726594 A1 | 23-02-1989 |
| EP 0644312 | A | 22-03-1995 | IT MI930723 U1 | 17-03-1995 |
| | | | IT MI930723 V0 | 17-09-1993 |
| | | | EP 0644312 A2 | 22-03-1995 |
| US 3848390 | A | 19-11-1974 | NONE | |
| EP 0100733 | A | 15-02-1984 | FR 2531183 A1 | 03-02-1984 |
| | | | DE 3370848 D1 | 14-05-1987 |
| | | | EG 15511 A | 30-12-1990 |
| | | | EP 0100733 A1 | 15-02-1984 |
| | | | ES 282178 U | 01-04-1985 |
| | | | GR 79347 A1 | 22-10-1984 |
| | | | OA 7514 A | 31-03-1985 |
| | | | PT 77140 A ,B | 01-09-1983 |
| EP 1054133 | A | 22-11-2000 | DE 29908641 U1 | 26-08-1999 |
| | | | EP 1054133 A1 | 22-11-2000 |
| US 3163264 | A | 29-12-1964 | NONE | |